

REMARKS

This Response is submitted in reply to the non-final Office Action mailed on January 23, 2007. A Terminal Disclaimer is submitted herewith. The Director is authorized to charge \$130.00 for the Terminal Disclaimer and any additional fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 112701-530 on the account statement.

Claims 1-19 are pending in this application. In the Office Action, Claims 1-19 are rejected under 35 U.S.C. §103 and Claims 1-19 are provisionally rejected under obviousness-type double patenting. For the reasons set forth below, Applicants respectfully submit that the rejections should be withdrawn.

In the Office Action, Claims 1-3, 5-7, 9 and 12-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,177,580 to Timmermann et al. ("*Timmermann*") in view of EP 0726321 to Barclay ("*Barclay*"). Applicants believe this rejection is improper and respectfully traverse it for at least the reasons set forth below.

Independent Claims 1 and 7 recite, in part, one or more long-chain polyunsaturated fatty acids from a biomass obtained from the culture of a microorganism incorporated into a carrier oil. In contrast, Applicants respectfully submit that there is no suggestion or motivation to combine the cited references to obtain the present claims, and even if combinable, all of the claimed elements are not taught or suggested by the cited references.

Applicants respectfully disagree with the Patent Office's reason for a motivation to combine the cited references and respectfully submit that it is based on a misunderstanding of the cited references and the present claims. For example, the Patent Office asserts that, because both references are directed to making dietary lipids useful in foods, infant formulas and the like, they are analogous art. See, Office Action dated January 23, 2007, page 3. The Patent Office also asserts that the different approaches the cited references take to solve this problem are not germane. Applicants respectfully disagree.

Applicants respectfully submit that, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). This certainly applies here where *Barclay*

and *Timmermann* the cited references teach completely different and incompatible processes for making their final product. As a result, the different approaches taken by the cited references are germane in that they teach away from the proposed combination.

Timmermann teaches a non-biological process of making synthetic triacylglycerols rich in conjugated linoleic acid (CLA) residues. See, *Timmermann*, column 2, lines 19-41. CLA is not an LC-PUFA. As admitted by the Patent Office (see, Office Action dated February 2, 2006, page 4, lines 7-8), there is no reference to LC-PUFA in *Timmermann*. In fact, there is no reference to any biomass or microorganisms in *Timmermann* as admitted by the Patent Office. *Barclay* teaches a biological process for obtaining arachidonic acid from biomass produced by culturing a specific micro-organism. See, *Barclay*, page 3, lines 9-12. One having ordinary skill in the art would understand that the synthetic chemical route taught by *Timmermann* cannot be applied to the biological process of *Barclay* or vice versa. Because the principle operations of the cited references are incompatible with each other, one skilled in the art would not be motivated to modify or combine the cited references to arrive at the present claims.

Moreover, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. For example, *Timmermann* teaches a required process step of heating the reaction mixture to a temperature of 180-240 °C. See, *Timmermann*, column 4, lines 5-14. Applicants respectfully submit that such a heating application would render any microorganisms from *Barclay* innocuous and unable to perform its intended function as taught by *Barclay*. The Patent Office has not even attempted to show how *Barclay* and *Timmermann* could be combined to arrive at the present invention. Consequently, *Timmermann* actually teaches away from using any microorganisms. Accordingly, one having ordinary skill in the art would have no reasonable expectation of success in combining *Timmermann* and *Barclay* to arrive at the present claims, especially the process claims as admitted by the Patent Office.

In sum, Applicants respectfully submit that the Patent Office has failed to consider the cited references as a whole including those portions teaching against or away from each other and/or the claimed invention. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve Inc.*, 796 F.2d 443 (Fed. Cir. 1986). "A prior art reference may be considered to teach away when a person of ordinary skill, upon reading the reference would be discouraged from following the path set out

in the reference, or would be led in a direction divergent from the path that was taken by the Applicant.” *Monarch Knitting Machinery Corp. v. Fukuhara Industrial Trading Co., Ltd.*, 139 F.3d 1009 (Fed. Cir. 1998), quoting, *In re Gurley*, 27 F.3d 551 (Fed. Cir. 1994). As a result, it does not matter if the teaching away portion comes from the primary or the secondary reference or the secondary reference is shown to be inoperable because either of these would discourage the skilled artisan from making the combination in the first place.

What the Patent Office has done is to rely on hindsight reconstruction of the claimed invention. Applicants respectfully submit that it is only with a hindsight reconstruction of Applicants’ claimed invention that the Patent Office is able to even attempt to piece together the teachings of the prior art so that the claimed invention is allegedly rendered obvious. Instead, the claims must be viewed as a whole as defined by the claimed invention and not dissected into discrete elements to be analyzed in isolation. *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983); *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995). One should not use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d at 1075. (Fed. Cir. 1988).

Applicants also respectfully submit that, even if combinable, the cited references do not disclose or suggest all of the claimed elements. For example, the cited references fail to disclose or suggest the long-chain polyunsaturated fatty acids are incorporated such that at least 60% by weight of the long-chain polyunsaturated fatty acids present in the biomass are present in the carrier oil but that less than 10% of phosphorus that is present in the biomass is present in the carrier oil as required, in part, by Claim 1. Further, the cited references fail to disclose or suggest transferring the long-chain polyunsaturated fatty acid(s) in the form of triacylglycerols to the carrier oil as required, in part, by Claim 7.

Moreover, the Patent Office has failed to provide support for every element of Claims 1 and 7 from the cited references. The Patent Office alleges that the teaching of high yield in *Timmermann* must mean greater than 60% or that because phosphorus must be absent from *Timmermann*’s composition because he fails to mention any. Nevertheless, high yield is a relative term and can be used comparatively. For example, a process that previously yield 5%

and is modified to yield 20% can be described as having a high yield. Accordingly, Applicants respectfully submit that the Patent Office is basing its conclusions on tenuous assumptions.

As admitted by the Patent Office, *Timmermann* fails to disclose or suggest any LC-PUFA. In fact, there is no reference to any biomass or microorganisms in *Timmermann* as admitted by the Patent Office. Further, Applicants respectfully submit that *Barclay* achieves its objective by using conventional methods of extraction (methods known in the art), such as extraction with solvents or supercritical fluid extraction, because the use of edible oils to extract another oil from a biomass was not at that time a standard method known in the art. In view of this, the statement in *Barclay* on page 6 line 27 pointed out by the Patent Office refers to recovering the lipids by conventional extraction methods and converting them subsequently into the form of edible oil in another step.

According to an embodiment of the present invention, the carrier oil is directly used to selectively displace the biomass oil (not unwanted impurities) from the milled biomass. For example, contrary to the Patent Office's assertions that this limitation is not present in the claims, Claims 1 and 7 recite, in part, that one or more long-chain polyunsaturated fatty acids from a biomass obtained from the culture of a microorganism are incorporated into a carrier oil. This enables the separation of the oil from the biomass residue, for example, when the resulting biomass-oil slurry is squeezed in a press. Consequently, although the pressed cake still retains some oil, it has a very low content of LC-PUFA. The stable oil obtained by the claimed process is clean and does not need to be subjected to further purification. In addition, the LC-PUFA is protected from oxidation by antioxidants present in the carrier oil.

For at least the reasons discussed above, the combination of *Timmermann* and *Barclay* is improper. Moreover, even if combinable, the cited references do not teach, suggest, or even disclose all of the elements of independent Claims 1 and 7 and Claims 2-3, 5-6, 9 and 12-19 that depend from these claims, and thus, fail to render the claimed subject matter obvious.

Accordingly, Applicants respectfully request that the obviousness rejection with respect to Claims 1-3, 5-7, 9 and 12-19 be reconsidered and the rejection be withdrawn.

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Timmermann* in view of *Barclay* and U.S. Patent No. 5,407,957 to Kyle ("Kyle"). Claims 8-10 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Timmermann* in view of *Barclay* and U.S. Patent

No. 5,773,075 to Todd ("*Todd*"). Claims 10-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Timmermann* in view of *Barclay* and U.S. Patent No. 5,840,945 to Tsujiwaki et al. ("*Tsujiwaki*"). Applicants respectfully submit that the patentability of Claims 1 and 7 as previously discussed renders moot the obviousness rejections of Claims 4 and 8-11 that depend from independent Claims 1 and 7. In this regard, the cited art fails to teach or suggest the elements of Claims 4 and 8-11 in combination with the novel elements of Claims 1 and 7.

In the Office Action, Claims 1-19 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting over Claims 1-17 of co-pending Application 10/526,576. Submitted with this response is a Terminal Disclaimer disclaiming the terminal part of any patent granted on the pending application extending beyond the expiration date of the following co-pending Application 10/526,576.

Accordingly, Applicants respectfully request that the provisional rejection of Claims 1-19 under obviousness-type double patenting be withdrawn.

For the foregoing reasons, Applicants respectfully request reconsideration of the above-identified patent application and earnestly solicit an early allowance of same.

Respectfully submitted,

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Dated: April 23, 2007